

**ABSTRACT**

A cardiac pacemaker has a pulse generator which emits stimulation pulses which are respectively separated by stimulation intervals and which collectively have an average duration. A modulation device alternately shortens and lengthens the stimulation intervals, without changing the average duration. An evaluation unit analyzes signals detected after each stimulation pulse and determines the electric restitution of the heart at the average stimulation interval duration on the basis of a measurement of the duration of the action potential. Changes in a measuring variable, associated with the duration of the action potential, caused by the modulation of the stimulation intervals is determined in a relationship to the average duration of the stimulation interval. This relationship is compared with at least one predetermined value, and the average duration of the stimulation interval is controlled on the basis of this comparison.